

TABLE 5 - ALTERNATIVE 3 PRELIMINARY COST PROJECTION

Component No.	Component Description	Key Assumptions	Quantity	Unit	Unit Cost	Estimated Cost	
						One-time	Annual O&M
1	Institutional Controls	Includes modification of current restrictive covenants.	1	LS		\$10,000	-
	Institutional Controls Subtotal					\$10,000	\$0
2	Operation and Maintenance Planning	Includes preparation of plan for cap inspection/repair and groundwater monitoring.	1	LS		\$10,000	-
	Operation and Maintenance Planning Subtotal					\$10,000	\$0
3	Groundwater Extraction/Treatment for Hydraulic Control						
	Pre-Design Investigation	Includes pump testing and modeling evaluation to determine target well spacing for hydraulic control. (Does not include any additional well installation).	1	LS		\$25,000	
	Extraction Well Installation	Assume 14 extraction wells installed in Zone A immediately west and south of capped area (approx. 50 ft. spacing). Assume 6 extraction wells installed in Zone B. Assumes wells 6 in. diam. Includes pump costs and installation. Includes pump replacement every 10 years.	20	wells	\$8,000	\$160,000	\$10,000
	Piping	Includes piping from well to treatment compound and piping from treatment compound to POTW connection at Marlin Ave.	700	ft	\$25	\$17,500	
	Treatment Compound Containment	Assume 50 ft. by 50 ft. concrete slab with 2 ft containment walls	1	LS		\$10,000	
	Treatment Compound Fence	Assume chain link fence with barbed wire.	200	ft	\$20	\$4,000	
	Sedimentation/Surge Tank	Assume 1,000 gal poly tank	1	LS		\$3,000	
	Low Profile Aeration Unit	Assume treatment system flow rate of 40 gpm. Annual O&M cost includes maintenance/cleaning and assumes one equipment replacement during 30 year evaluation period.	1	LS		\$25,000	\$10,000
	Catalytic Oxidation Unit	Assume vapor flow rate of 650 scfm. O&M costs include assumption of catalyst replacement (\$20,000) every 5 years and emissions monitoring (PID).	1	LS		\$400,000	\$40,000
	POTW Connection	Includes application preparation/submittal and connection construction.	1	LS		\$20,000	
	Electrical/Controls Installation		1	LS		\$15,000	
	Electricity		1	LS			\$15,000
	Natural Gas	Fuel for catalytic oxidation unit.	1	LS		\$3,000	\$50,000
	Effluent Sampling/Analysis		12	mo.	\$1,000		\$12,000
	POTW Charges	Assume 40 gpm system discharge.	2,100	10,000 gal	\$38.40		\$80,640
	General System O&M	Includes labor and miscellaneous parts.	12	mo.	\$1,000		\$12,000
	Groundwater Monitoring	Assumes annual sampling of 9 Zone A wells, 5 Zone B wells, 1 Zone C well with analyses for VOCs.	1	LS			\$12,000

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3	Groundwater Extraction/Treatment for Hydraulic Control (continued)						
	Well Repair/Replacement	Assumes repair of well head/protective casing required at 2 wells per year.	2	wells	\$1,000		\$2,000
	Plugging/abandonment of monitoring wells no longer in use.	Assumes plugging of 20 Zone A wells (wells in South Area and MW05).	1	LS		\$10,000	-
	Engineering Design/Project Management/ Construction Management/ Reporting	Assumed at 25% of construction components cost (per EPA, 2000).				\$166,875	
	Groundwater Extraction/Treatment for Hydraulic Control Subtotal					\$859,000	\$243,600
	Subtotal	Sum of components subtotals.				\$879,000	\$243,600
	Contingency	Assumed at 20% (10% scope + 10% bid) per EPA, 2000.				\$176,000	\$48,700
	Subtotal with Contingency					\$1,055,000	\$292,300
	Present Worth of Annual Costs	Assume 30 years at 7% discount factor.				\$3,630,000	
	Total Preliminary Estimated Present Worth Cost	Includes present worth of annual costs.				\$4,700,000	
	Total Preliminary Estimated Undiscounted Cost	Assumes no discount for annual costs (30 years).				\$9,800,000	

Notes:

¹LS = Lump Sum Estimate